

**WHAT IS CLAIMED IS:**

1. A method for treating a contaminated fluid comprising the steps of:
- packing a column with a cellulose-based material;
- passing said contaminated fluid through said packed column where
- 5   contaminants are adsorbed onto said cellulose-based material until said cellulose-based material is spent;
- removing said spent cellulose-based material; and
- composting said spent cellulose-based material to reduce the volume of spent cellulose-based material and degrade and concentrate said contaminants.
- 10   2. The method of Claim 1, wherein said cellulose-based material is selected from the group consisting of hay, wood, chips, peat, nut shells and kenaf.
3. The method of Claim 1, wherein said contaminated fluid is passed through said column by up-flow hydraulics.
4. The method of Claim 1, wherein said composting occurs on-site.
- 15   5. The method of Claim 2, wherein said cellulose-based material is kenaf fibers.
6. The method of Claim 1, wherein said contaminated fluid is selected from the group consisting of contaminated water and air.
7. The method of Claim 1, wherein said composted material is
- 20   substantially free from biodegradable contaminants.
8. The method of Claim 1, wherein said contaminants are selected from the group consisting of organic contaminants and inorganic contaminants.

9. The method of Claim 8, wherein said organic contaminants are selected from the group consisting of TNT, phenols, PCBs, petroleum products, MTBE, chlorinated solvents, and ketones.

5 10. The method of Claim 8, wherein said inorganic contaminants are selected from the group consisting of cadmium, chromium, arsenic, mercury, nickel, copper, zinc, lead, nitrate, ammonia and phosphates.

11. The method of Claim 7, wherein over 50% of the spent material is reduced.

10 12. The method of Claim 5, wherein over 75% of said contaminants in said contaminated fluid is removed.

13. The method of Claim 1, wherein over 75% of said contaminants in said contaminated fluid is removed.

14. The method of Claim 1, wherein non-biodegradable adsorbates within said composted cellulose-based material are formed into a solid matrix.